Nepal Journal of Multidisciplinary Research (NJMR)
Vol. 6, No. 4, December 2023. Pages: 72-80
ISSN: 2645-8470 (Print), ISSN: 2705-4691 (Online)
DOI: https://doi.org/10.3126/njmr.v6i4.62009

Enhancing Investment Strategies: A Comprehensive Technical Analysis Approach for Informed Buy-Sell-Hold Decisions in NEPSE (Nepal Stock Exchange)

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Received: September 11, 2023; Revised & Accepted: December 24, 2023

Abstract

Stock price forecasting is a type of time series issue that anticipates a company's condition based on an analysis of time values. To address the Buy-Sell-Hold problem, investors need to make accurate predictions about future indices or stock price changes. In this study, data was collected for 6 months (February 2023 to July 2023), and technical trading tools such as candlesticks, Bollinger Band, and MACD were used. While personal views of respondents were taken from Google Form Questionnaire Surveys to determine the Buy-Sell-Hold in NEPSE. A questionnaire survey yielded 62 responses. A combined chart of Candle Sticks, BB, and MACD gives better results compared to the analysis of a single technical indicator. This data shows that 70.97% agreed that the technical analysis gives the right path and decision, and the rest 29.03% did not agree with the technical analysis to predict the Buy-Sell-Hold decisions. However, seeing the statically, real distribution of the "Buy-Sell-Hold" would be helpful for a fuller analysis and understanding of the data. These analyses can be favourable to the good economic and political condition of Nepal.

Keywords: Investment strategies, Nepal Stock Exchange, Technical Analysis

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Introduction

Buy-sell-hold investing is a conservative passive investment approach in which investors acquire stocks and hold them for an extended period, regardless of market volatility. The purpose of this study is to examine the applicability of buy-and-hold strategies in relation to the risk-return trade-off concept (Ling, Yat, & Muhamad, 2014). Stock price forecasting is a type of time series problem that predicts a company's status based on the examination of time values or values. The behavior of a stock or firm varies as its price changes over time. The technical characteristics are used to assess a stock's long-term and short-term performance. This method also examines and advises investors on how to buy and sell stocks overall, resulting in a high return with minimum risk (Ahmed & Goyal, 2023).

Research Objective

The primary goal of this research is to determine the Buy-Sell-Hold decision in NEPSE. This study's specific goal is to examine whether technical analysis can determine the Buy-Sell-Hold strategy by using technical tools. Based on technical indicators and respondents' opinions, this study will also help improve the usage of technical analysis at Nepal Stock Exchange Ltd.

Literature Review

When compared to a buy-and-hold strategy and trading blue-chip stocks, the model outperformed in down-trending markets by using short selling, but it frequently trailed when equities were consistently in an uptrend. However, for small-cap companies, regardless of general market conditions, the model frequently outperformed a buy-and-hold strategy, in part because the model was trained to trade less frequently, resulting in reduced total trading expenses (Ye & Schuller, 2023).

Predicting prices or movements is one of the most difficult challenges in the Nepalese stock market. Although this is plausible using technical metrics, given Nepal's economic and political calamity, it is not certain. However, as the technical chart of the figures shows, the candlestick pattern's results have been uneven in the short term. Because the candlestick pattern was not real, no buy-sell-hold decision can be taken. (Joshi, 2023; Thapa, 2022).

Predicting stock closing prices for the short, medium, and prolonged periods Based on the expected patterns in stock prices, our algorithm proposed one of three signals to the user: buy, sell, or hold. The experimental findings demonstrated that the proposed method outperforms the most advanced approaches (Albahli, et al., 2022).

This study demonstrates how the trade signal produced by this indicator can be used to lower market trading risk. This research also investigates which model can boost profitability by incorporating additional criteria to avoid erroneous trade signals. Technical analysis is used to discover the optimal entry and exit points when buying and selling equities. (Joshi, 2022; Thapa, 2023). Using Bollinger Bands (BB) we can see that the crossing point is where the buy and sell signals are formed. Suppose that currently the buy signal is generated, and the indicator turns green. If you hover over this point, you will notice that the closing price is above the

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indication value. When the sell signal is generated and the indicator turns red, the closing price is lower than the indicator value (Patil & Kadam, 2022).

The outcomes of trading signals based on Bollinger Bands are considered valuable for traders because they provide a clear "buy" or "sell" signal. At the same time, relying on Bollinger Bands with only a specific period of MA, i.e., Bollinger Bands with a little Moving Average (MA), shows more fluctuations and vice versa, so select an incorrect MA. Time can be deceiving; therefore, assistance is required (Vaidya, 2021).

The research gap in the combined study of BB, candlesticks, and MACD could be the absence of research on the efficiency of this combination in anticipating market movements or determining Buy-Sell-Hold. While various papers examine the usage of these indicators separately, there has been little research on how they perform together and whether this combination can provide more insight into the market. As a result, a study that investigates the effectiveness of this combination in anticipating market trends or suggesting entry and departure points for agreements could offer a research gap to investigate. Furthermore, researchers could investigate how changing characteristics or periods for each indication affect prediction accuracy.

Research Methodology

This research study's design is built on mixed methodologies. Secondary data was acquired and analyzed for this study from a variety of books, journals, and websites. The analysis relies on data from the Nepal Stock Exchange Ltd. From February 2023 to July 2023, the NEPSE Index was used. The data analysis is based on the generated chart patterns of the Candles Stick technical indicator with integrated Bollinger Band (BB) and Moving Average Convergence Divergence (MACD).

Primary data questionnaires, on the other hand, are collected online using Google Forms Survey and email, as well as Viber, WhatsApp, Telegram, and Messenger. In this poll, 62 persons completed and returned the questionnaire, 12 of whom were female and 50 of whom were male. In this research study, question 21 is used for research purposes.

For data analysis, the computer applications Statistical Package for Social Sciences (SPSS), Microsoft Excel Sheet, and Technical Chart (www.nepsealpha.com/trading/chart) were utilized in this study.

Results and Discussion

I. Technical Chart Combined (Candle Sticks, BB and MACD)

Figure 1 shows a chart of the NEPSE combining Candles Stick, and Bollinger Band, and almost in the technical chart, there are 125 recognized candle sticks generated in the chart, which signifies 125 days stocks were traded in 6 months. Among them, 53 green candles had developed, while the remaining 72 were red candles, indicating that the majority of red candles are high, and stock markets have been in a downtrend over the past six months. However, the NEPSE index began in early February 2023 at 2106.93 and closed at 2126.11 at the end of July 2023. However, this article discusses the formation of a candlestick pattern with a combination of BB and MACD on a chart of the last six months (February 2023 to July 2023).

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Figure 1: NEPSE Combined chart of Candle Sticks, BB, and MACD

Sources: https://nepsealpha.com/trading/chart

Some major findings are pointed out in number and alphabet in the preceding Figure 1: of NEPSE combine chart of Candle stick, BB and MACD. In the starting period of February 2023, BB upper and lower band were moving down with shrink. At the same time in the level of the middle band was shooting star candle was formed noted in BB point 1, in the next day green hammer candle was developed, but it was not valid in next day with a red marubozu candle. Then the candle stick was continuously running over the lower band, which shows the sell signal the point 1 of BB. At the same time in the MACD chart in the month of March 2023, histogram charts were developed at a negative level, but histograms were trying to come to a level of positive, so the color of the red histogram was changed to pink. In point A of MACD, there was red histogram level was in a decreasing trend. If the BB and MACD charts combined compared with each other exact results cannot be found.

Point 2 of BB and B of MACD, have mixed results, so no decision can be acceptable. In point C of MACD, there was a falling trend of a green histogram to a negative way. At the same in BB candle sticks were moving downward, and the upper and lower also changed direction downward, this indicates the sell signal by the combined chart. At the level of point 3 of BB, there was market upward reversal candles formed and in the MACD point D histogram had

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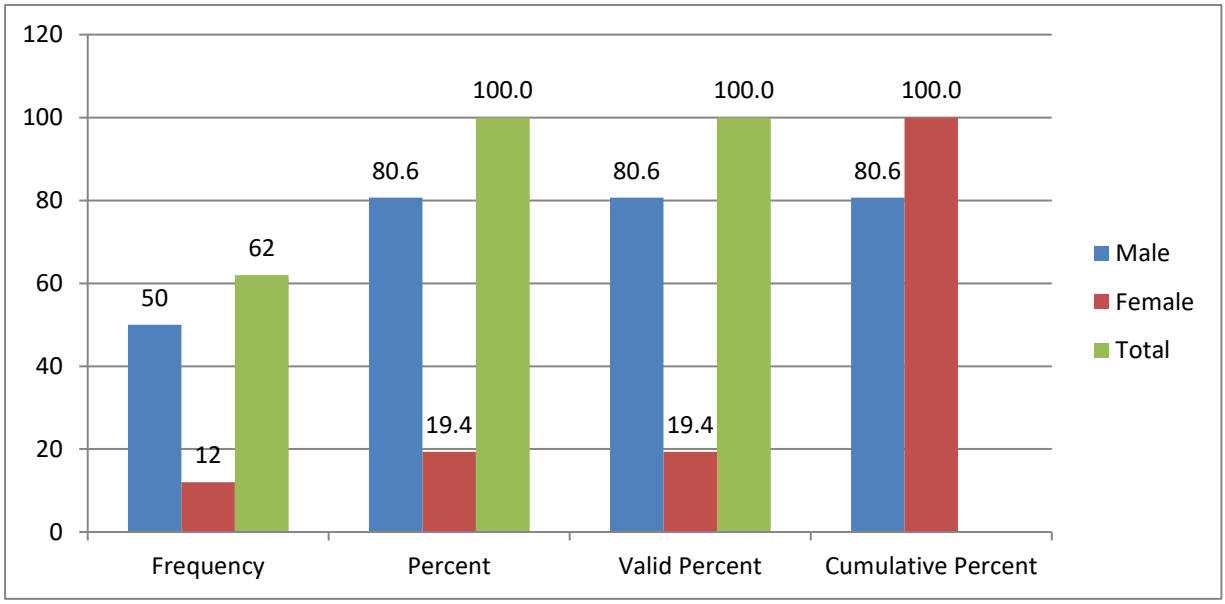
moved to positive direction as well as MACD positive line cross over. By following these rules by BB and MACD at BB point 5 candle sticks were touching the middle band turned in to upward direction and at MACD E, MACD lines were running over the zero-line, histogram was too positive.

At the level of BB point 3 and the end of MACD point D can buy the stock, if the investor or trader waits for some confirmation then they can enter at the level of BB point 5 and MACD E. In this 6-month period, MACD shows highly volatile and could not make the right decisions in only one of the MACD charts.

II. Primary Data (Google Form Survey)

Figure 2: Respondents



Sources: Google Form Survey

The frequency, percentage, percentage valid, and cumulative percentage of male and female responders in a sample are shown in Figure 2. The sample size is 62 people, 50 of whom are men and 12 of whom are women. The percentage reflects the gender distribution in the sample, with males accounting for 80.6% and females accounting for 19.4%. The Valid Percentages display the percentage of each gender in the sample after missing or incorrect data is removed. Because there is no invalid data in this scenario, the valid percent is the same as the percent. The Cumulative Percentage displays the sample's cumulative percentage of each gender. In this example, the cumulative proportion of men is 80.6%, while the cumulative proportion of women is 80.6%.

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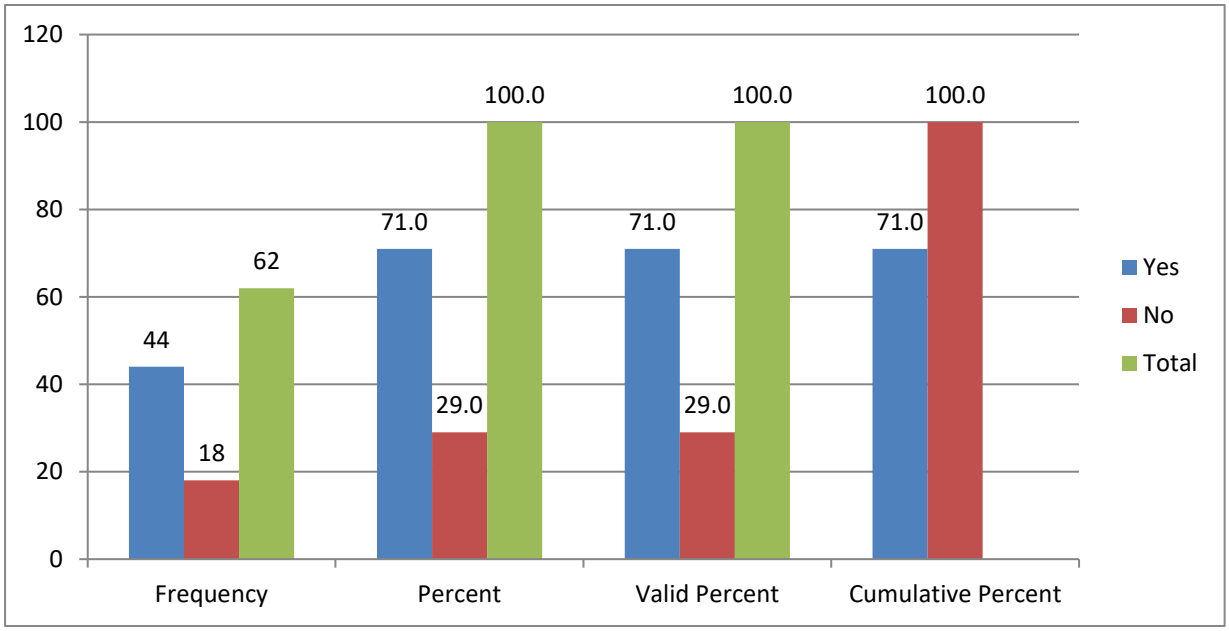
Figure 3: Buy-Sell-Hold Respondents



Sources: Google Form Survey

Figure 3: displays the frequency, percent, valid percent, and cumulative percent of respondents in a sample who answered "yes" or "no" to a question. The sample size is 62 people, with 44 saying "yes" and 18 saying "no." The percentage displays the percentage of each response in the sample, with "yes" accounting for 71% and "no" accounting for 29%. The valid percentage displays the percentage of each response in the sample after missing or invalid data is removed. There is no missing or invalid data in this situation, thus the valid percent is the same as the percent. The cumulative percentage displays the total proportion of all responses in the sample. In this scenario, the total percentage of "yes" is 71%, and the cumulative percent of "no" is 100%.

This figure summarizes the responses to a sample question, which can be useful for assessing the data and developing conclusions. The valid percent is especially valuable when there is missing or inaccurate data since it provides a more accurate depiction of the sample's replies. The cumulative percentage can be used to identify when a specific proportion of respondents answered "yes" or "no".

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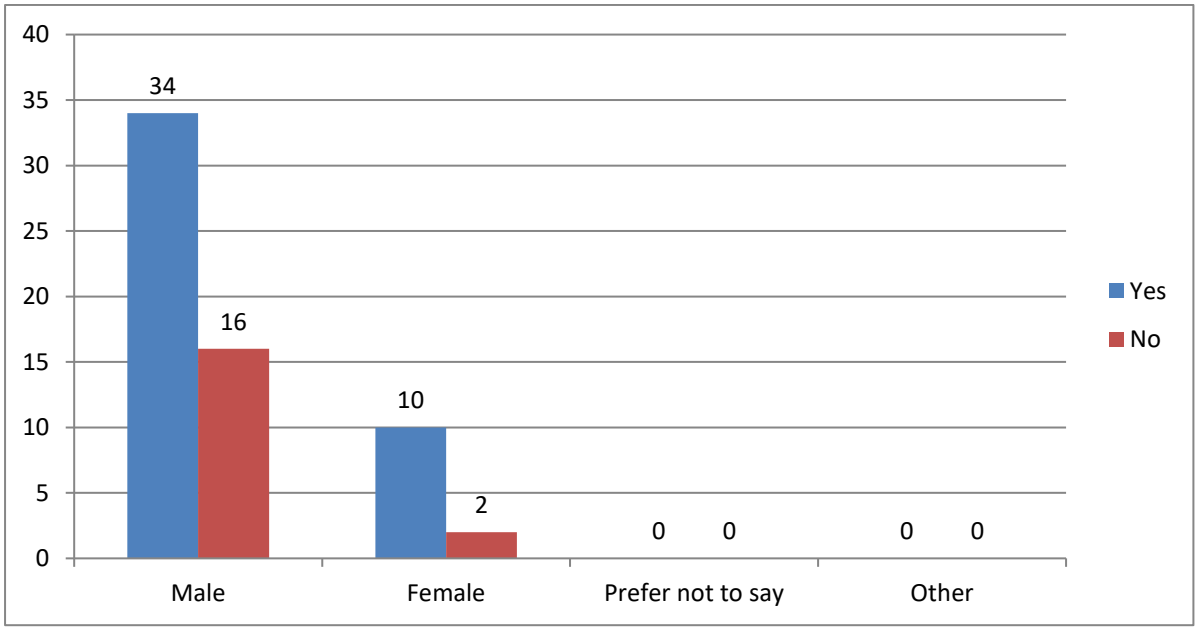
Figure 4: Buy-Sell-Hold Respondents in Gender



Sources: Google Form Survey

The Figure 4: above depicts male and female respondents' replies to a question regarding whether to buy, sell, or hold of stocks. According to the figure, 34 males and 10 females replied "yes," while 16 males and 2 females answered "no." The categories "prefer not to say" and "other" received no replies.

This figure summarizes the gender replies to the question, which can be useful for interpreting the data and generating conclusions. The data can utilize this information, for example, to see if there are any gender differences in the responses to the question. In this situation, observe that a greater proportion of males answered "yes" than females, whereas a greater proportion of females said "no" than males. However, this should proceed with caution when drawing generalizations from such a tiny sample size.

III. Statistics

Item	Number of Respondents	Mean	Median	Std. Deviation	Variance
Buy-Sell-Hold	62	1.29	1.00	0.458	0.209

Table 1: Descriptive Statistics of Buy-Sell-Hold of Respondents
Sources: Google Form Survey

The mean is 1.29. This implies that the "Buy-Sell-Hold" variable has an average value of about 1.29. The average value is 1.00. When all values are ordered in ascending order, the median reflects the middle value. It is 1.00 in this case, indicating that half of the data points are below it and half are above it. 0.458 is the standard deviation. It calculates the dispersion or spread

of data. A lower standard deviation indicates that the data points are close to the mean, whereas a higher standard deviation indicates that there is more variability. A standard deviation of 0.458 suggests that the data points are spaced out from the mean in this situation. The standard deviation is 0.209. It is yet another indicator of data spread. The square of the standard deviation is used to compute it. A lower variance means that the data is less variable.

Overall, the descriptive statistics in the table indicate that the replies are consistent and tightly concentrated around the mean. However, seeing the real distribution of the "Buy-Sell-Hold" would be helpful for a fuller analysis and understanding of the data.

Conclusion

A combined chart of Candle Sticks, Bollinger Band (BB), and Moving Average Convergence Divergence (MACD) gives better results compared to the analysis of a single technical indicator. In the above figure 1: among of three tools, if any of the two show the same results as Buy-Sell-Hold, can attempt to follow the signal in the favorable economic and political condition of Nepal.

From the survey of Google Form Questionnaire, according to the figure, 34 males and 10 females replied "yes," while 16 males and 2 females answered "no." The categories "prefer not to say" and "other" received no replies. This data shows that 70.97% agreed that technical analysis gives the right path and decision, and the rest of 29.03% did not agree with technical analysis to predict the Buy-Sell-Hold decisions.

Technical characteristics are used to assess the long-term and short-term performance of any stock or share. This method also examines and advises investors on whether to purchase or sell any stock over the long term, resulting in a high return with low risk (Ahmed & Goyal, 2023). However, seeing the statically, real distribution of the "Buy-Sell-Hold" would be helpful for a fuller analysis and understanding of the data. Furthermore, the researcher can research combined technical charts to analyze the "Buy-Sell-Hold" to get more analytical and appropriate results.

Acknowledgements

I would like to thank all the respondents for their time and assistance in completing the survey questionnaire.

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